

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (currently amended) A network for providing multi-service generalized Layer-2 VPNs Virtual Private Network (VPN) services, said network comprising:

a set of elements interconnected by services;

at least one first subset of said elements defining a private network;

at least one second subset of elements different from said first subset defining a provider network wherein at least two subgroups of said first subset of elements may be connected via said provider network;

a provisioning mechanism used to define element membership in said first subset of elements; and

a signalling mechanism used to create generalized pseudo-wire connectivity between elements within said first subset of elements, said connectivity created across said second subset of elements, and said connectivity at a layer selected from one or both of the group consisting of Layer-2 and Layer-1.

2. (currently amended) A network for providing multi-service generalized Layer-2 VPNs VPN services as claimed in claim 1, said network further comprising:

a network discovery mechanism used to propagate membership information regarding elements which are members of said first subset;  
and

a service discovery mechanism used to propagate services information regarding services interconnecting elements in said first subset with elements in said second subset.

3. (currently amended) A network for providing multi-service generalized Layer-2 VPNs VPN services as claimed in claim 1, said signalling mechanism having:

a manager mechanism having a first portion used to effect connection admission control and a second portion used to select encapsulation in response to a connection request; and

a multi-service tunnel selector mechanism used to create connectivity across the provider network.

4. (currently amended) A network for providing multi-service generalized Layer-2 VPNs VPN services as claimed in claim 3, said network further comprising:

a generalized single-sided signalling mechanism used to initiate said connection request triggered by an element of said first subset.

5. (currently amended) A method of organizing a network having a set of elements interconnected by services, wherein at least one first subset of said elements defines a private network and at least one second subset of elements different from said first subset defines a provider network and wherein at least two subgroups of said first subset of elements may be connected via said provider network, said method comprising:

defining element membership in said first subset of elements via a provisioning mechanism;

creating generalized pseudo-wire connectivity between elements within said first subset of elements, said connectivity created across said second subset of elements, and said connectivity at a layer selected from one or both of the group consisting of Layer-2 and Layer-1.

6. (currently amended) The method of claim 5, further comprising the steps of:

propagating GL2VPN membership information regarding elements which are members of said first subset via a network discovery mechanism; and

propagating services information regarding services interconnecting elements in said first subset with elements in said second subset via a service discovery mechanism.

7. (currently amended) The method of claim 5, further comprising ~~the step of~~:

effecting connection admission control via a first portion of a manager mechanism;

selecting an encapsulation protocol in response to a connection request via a second portion of a manager mechanism; and

creating connectivity across the provider network via a multi-service tunnel selector mechanism.

8. (currently amended) The method of claim 7 further comprising ~~the step of~~:

initiating said connection request in response to a trigger by an element of said first subset via a generalized single-sided signalling mechanism.

9. (new) A network for providing multi-service generalized Layer-2 VPN services as claimed in claim 1 wherein said provider network is a non-Multi-Protocol Label Switched provider network.

10. (new) A network for providing multi-service generalized Layer-2 VPN services as claimed in claim 1 wherein said generalized pseudo-wire connectivity uses layer-2 pseudo-wires.

11. (new) A network for providing multi-service generalized Layer-2 VPN services as claimed in claim 1 wherein said generalized pseudo-wire connectivity uses layer-1 connections.

12. (new) The method of claim 5 wherein said provider network is a non-Multi-Protocol Label Switched provider network.